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We claim:

- 5 1. A method for altering the substrate specificity of enzymes,  
which comprises carrying out the following steps:
- 10 a) introducing a DNA which comprises a copy of the gene  
coding for the enzyme into the Escherichia coli strain  
XL1 Red or into a functional derivative,
- 15 b) incubating the transformed Escherichia coli strain XL1  
Red or its functional derivative to generate mutations in  
the enzyme gene,
- 20 c) transmitting the mutated DNA from the strain XL1 Red or  
its functional derivative to a microorganism which has no  
impeding enzyme activity,
- 25 d) incubating this microorganism to detect the enzyme  
activity on or in at least one selection medium which  
comprises at least one enzyme substrate which makes it  
possible to recognize unaltered substrate specificity of  
the enzyme, with or without other indicator substances,
- e) selecting the microorganisms which show an alteration in  
the substrate specificity.

- 30 2. A method as claimed in claim 1, wherein steps (a) to (e) are  
performed several times in sequence by <sup>reisolating and retransforming</sup> returning the DNA from  
the microorganisms selected in step (e) to the strain  
Escherichia coli XL1-Red or its functional derivative.

- a 35 3. A method as claimed in claim 1 ~~or 2~~, wherein prokaryotic or  
eukaryotic microorganisms are used as microorganisms.

*claim 1*  
A method as claimed in ~~any of claims 1 to 3~~, wherein <sup>the bacteria are</sup>  
~~Gram-positive or Gram-negative bacteria, fungi or yeasts are~~  
used as microorganisms.

- a 40 5. A method as claimed in ~~any of claims 1 to 4~~, wherein a  
hydrolase is used as enzyme.

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claim 1  
the enzyme is  
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6. A method as claimed in ~~any of claims 1 to 5~~, wherein a  
hydrolase selected from the group consisting of proteases,  
lipases, phospholipases, esterases, phosphatases, amidases,  
nitrilases, ether hydrolases, peroxidases and glycosidases is  
5 used as enzyme.

a  
7. A method as claimed in ~~any of claims 1 to 6~~, wherein a  
lipase, esterase, nitrilase or phytase is used.

a  
10 8. A method as claimed in ~~any of claims 1 to 7~~, wherein the  
alteration in the substrate specificity results in a  
selective enzymatic activity.

15 9. A method as claimed in claim 8, wherein the alteration in the  
substrate specificity results in a regio-, chemo- or  
stereoselective or regio-, chemo- and/or stereoselective  
enzymatic activity.

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